

REMARKS

In the Office Action mailed on November 9, 2006, claims 1-2, 8, 12, 26 and 33-34 have been rejected as obvious under 35 U.S.C. §103(a) over U.S. Patent No. 5,758,465 to Logue (“the ‘465 patent”) in view of U.S. Patent No. 5,546,723 to Jones (“the ‘723 patent”). Claims 32, 35 and 36 have been rejected under 35 U.S.C. §103(a) as obvious over the ‘465 patent in view of the ‘723 patent, in further view of U.S. Patent No. 6,677,185 to Chin (“the ‘185 patent”). These rejections are traversed for the reasons set forth below.

It is also noted that claim 31 is indicated as pending and rejected on the Office Action Summary (but is not discussed in the Detailed Action). Note that this claim has been previously cancelled and is no longer pending.

A. CLAIM 1 AND ALL CLAIMS DEPENDENT THEREON ARE ALLOWABLE

A.(1) THE ‘723 PATENT TEACHES AWAY FROM THE REQUIRED ANTI-ROTATION ELEMENTS OF CLAIM 1

The obviousness rejection of claim 1 over the ‘423 patent in view of the ‘723 patent is improper since the two references in combination fail to teach or suggest all of the requirements of the claim. Claim 1 has been previously amended to include the limitations of former claims 14 and 15 (in the alternative), and requires the anti-rotation elements to have one of a hemisphered shape or a hollow truncated cone shape. The ‘723 patent has been cited to disclose this element. The ‘723 patent, however, fails to teach these shapes, and in fact teaches away from them. The Office Action admits these

claimed requirements are not disclosed, but suggests that the claimed elements represent only an obvious variation in shape. It is submitted that this is incorrect.

The '723 patent teaches that its gripper prongs 14 are "... formed with a sharp point so as to pass into and grip the wood sill ..." Col. 2, lines 58-59. Each of FIGS. 1B, 2B, 3B, 4C, and 5-7 likewise illustrate gripper prongs 14, 26, 34 and 44 (respectively) as being thin shapes having sharp points. Further, the '723 patent teaches that these elements are important to the intended purpose of its invention.

The '723 patent is directed to reinforcing plates for use in attaching a building frame wood sill to anchor bolts protruding from a concrete foundation. Abstract, Summary of the Invention. The '723 patent teaches that a troubling problem of the prior art occurred under earthquake conditions. In such circumstances, the shifting of a foundation caused an embedded anchor bolt to move into engagement with and exert a load on the sidewall of a hole through a wood sill through which it extended. Col. 1, lines 26-30. Such a load when placed directly on the wood sill could cause it to split. *Id.* The building frame was then subject to collapse or other significant damage. *Id.*, lines 35-40.

The '723 patent claims to address this problem through its invention of a reinforcing plate having gripper prongs with sharp points. Summary of the Invention, Col. 1, lines 45-49. After the sharp pointed gripper prongs have passed into and gripped the wood sill the reinforcing plate becomes firmly anchored. Summary of the Invention, col. 2, lines 57-60. If the anchor bolt shifts during earthquake or other conditions, the

bolt will engage then engage the firmly seated reinforcing plate instead of the sidewall of the hole through the wood sill. Summary of the Invention, col. 2, lines 4-30.

The '723 patent teaches that this configuration results in a much improved load transfer from bolt to wood:

“... the load forces are transferred to the wood sill by gripper prongs at the corners of the reinforcing plate. Standard washers need to crush down into the wood to restrain whereas the present invention does not ... since the gripper prongs transfer the load.”

Col. 4, lines 28-33. The '723 patent claims that this improved configuration results in up to 300% improvement in bolt to wood connection for much improved performance under quake conditions. Col. 2, lines 25-30.

Accordingly, the thin shape and sharp points on the gripper prongs of the '723 patent are important, if not critical, to the intended purpose of its invention: to firmly anchor the plate on the wood to thereby improve the load transfer of anchor bolt to wood. One considering the '723 patent would therefore not be led to the required shapes of claim 1: a generally hemisphered shape or a generally truncated hollow cone shape. These claimed shapes would be expected to crush the wood sill as they were forced downward into it due to their cross-sectional width and lack of a sharp point. The '723 patent expressly teaches away from crushing engagement (“..Standard washers need to crush down into the wood to restrain whereas the present invention does not ... since the gripper prongs transfer the load”) and instead teaches use of its thin, sharp pointed gripper prongs. Col. 4, lines 28-33.

It is therefore submitted that the '723 patent teaches away from the claimed structure and cannot support an obviousness rejection of claim 1.

A.(2) THE '723 PATENT FAILS TO TEACH ANTI-ROTATION ELEMENT ENGAGEMENT WITH SUBSTRATE AS REQUIRED BY CLAIM 1

Claim 1 requires, among other elements, that the anti-rotation elements are configured for engaging the substrate *that the fastener is driven into and that frictionally holds the fastener* in place. That is, the anti-rotation elements engage the *same* substrate that frictionally holds the fastener in place, with an example being the substrate 14 (e.g., a ceiling) as illustrated in FIG. 1 of the application. The '723 patent fails to teach or suggest this. Instead, the '723 patent teaches that its gripper prongs engage a wood sill that in turn rests on foundation (i.e., the substrate) that the fastener is inserted in and that frictionally holds the fastener in place. Referring to Figures 5, 6 and 7 by way of example, the fastener 52 is frictionally held in place in the foundation (i.e., substrate) 50. The gripper prongs 14, however, do not engage the foundation 50, but instead engage the wood sill 54 that rests on top of the substrate 50. Figure 7 of the '723 patent is presented below for convenience of consideration, with identifier added for the foundation and wood sill:

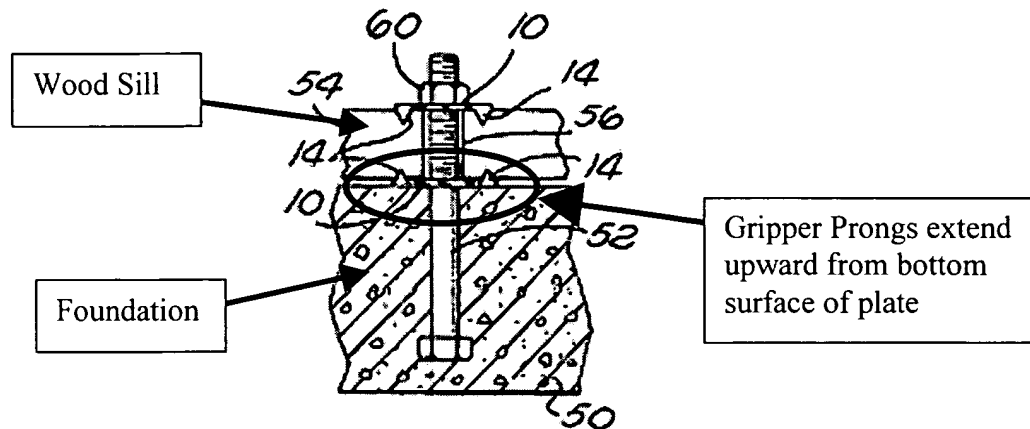


FIG. 7

Further, as shown in Figures 6 and 7 of the '723 patent, the gripper prongs 14 on the reinforcing plate resting on the foundation 50 (i.e., a substrate) are taught to face upward into the sill 54, not downward into the foundation 50. That is, the gripper prongs extend upward from a bottom surface of the reinforcing plate. This has been indicated in the above reproduction of Figure 7. This is opposite of the anti-rotation elements of the present invention which extend from the top side of the mounting portion into the substrate.

These are yet additional reasons that the '723 patent fails to disclose or suggest the limitations of claim 1 and is therefore an improper reference for rejecting claim 1 as obvious.

A.(3) THE '723 PATENTS GRIPPER PRONGS ARE NOT ANTI-ROTATION ELEMENTS CONFIGURED AS REQUIRED BY CLAIM 1

Claim 1 requires, among other elements, "... at least four anti-rotation elements ... configured for ... counteracting a moment acting upon said rod hanger as the

rod is threadably received by said rod receiving portion...” The gripper prongs of the ‘723 patent are not taught to be anti-rotation elements configured to counteract a moment acting on a rod hanger as a rod is threadably received. Instead, the gripper prongs have a thin, sharp pointed structure configured to transfer the load from an anchor bolt to a wood sill. Col. 4, lines 27-30. This is still another basis for the allowability of claim 1 over the ‘723 patent.

A.(4) DEPENDENT CLAIMS 2, 8, 12, 26 AND 32-34 ARE ALLOWABLE

Claims 2, 8, 12, 26 and 32-34 depend from claim 1 and are allowable for the same reasons that claim are.

B. CLAIMS 32, 35 AND 36 ARE ALLOWABLE

Claims 32, 35 and 36 have been rejected over the ‘465 patent in view of the ‘723 patent and in further view of the ‘185 patent. The rejections of claims 32, 35 and 36 are traversed for the reasons set forth below.

B.(1) THE ‘185 PATENT FAILS TO DISCLOSE THE REQUIREMENTS OF CLAIMS 32 AND 35.

Claims 32 and 35 each require a resilient cover formed of a polymer extending fully over the anti-rotation elements and which is secured to the anti-rotation elements by one of a chemical adhesive or thermoforming. The ‘185 patent fails to disclose this.

Instead, the '185 patent only discloses covering dimples 31 with an adhesive: "...dipping the dimples 31 ... into the adhesive layer 42 so as to adhere some adhesive agent 42 on to the dimples 31.." Col. 3, lines 21-24. The '185 patent fails to disclose an adhesive that holds a *separate* polymer cover on its dimples, or (in the alternative) *thermoforming* a polymer cover over its dimples.

Although an epoxy resin 5 is applied to the sink 3, this is done after the dimples 31 dipped in adhesive 42 have been attached to the substrate 1. Col. 3, lines 25-28; Figs. 3E - 3F. The dimples 31 are therefore not exposed to the epoxy resin 5, and it does not cover the dimples 31. The '185 patent therefore does not disclose or suggest the required elements of claims 32 and 35, and the obviousness rejection of these claims must be withdrawn.

B.(2) THERE IS NO MOTIVATION TO COMBINE THE CITED PATENTS SINCE THEY ARE FROM UNRELATED ARTS AND HAVE CONTRARY TEACHINGS

There must be some suggestion or motivation disclosed in the references or in the commonly known art to combine the cited references to support an obviousness rejection. MPEP §2143.01. It is submitted that the obviousness rejection of claims 32, 35 and 36 is improper because there is no motivation to combine the cited references with one another. Citing these unrelated references in combination improperly views the prior art only with the benefit of hindsight gained after considering the claimed invention.

The '723 patent teaches a reinforcing plate useful to anchor a wood sill to a foundation. The '465 patent teaches a device for securing a rod to a ceiling. Accepting only for the sake of argument that some motivation can be found for combining these

unrelated references, no motivation can be found for combining them with the significantly different '185 patent cited to reject claims 32, 35 and 36.

The '185 patent is titled "Method of Affixing a Heat Sink to a Substrate and Package Thereof" and teaches a method of affixing a heat sink to a micro-electronics substrate useful to dissipate heat from a semiconductor chip. It relates to the assembly of heat sinks in the micro-electronics or related arts. It is completely unrelated to reinforcing plates for wood sills (the '723 patent) and overhead fasteners (the '465 patent). One skilled in either of the arts of the '723 and '465 patents would not look to a method for affixing a heat sink to a micro-electronics substrate, nor could he find any motivation to combine the different teachings.

It is further submitted that there can be no motivation to combine the '185 patent and the '723 patents since the '185 patent teaches away from the '723 patent. The '723 patent teaches sharp-pointed gripper prongs that "...pass into and grip the wood sill..." Col. 2, lines 58-59. The dimples of the '185 patent, on the other hand, as best understood are spacer elements configured to rest on top of the surface of the substrate 1 to thereby create a space between the sink 3 and substrate 1. This space may be desirable to dissipate heat from the semiconductor chip 2 (e.g., to allow air flow into the sink 3 interior) and to thereby avoid transferring heat from the sink 3 to the substrate 1. It is known in the micro-electronics arts that excessive heat can result in substrate cracking, delamination and other disadvantageous effects.

Accordingly, the '185 patent teaches spacer element dimples that would fail their intended purpose if they "pass(ed) into" the substrate as is required of the gripper

prongs of the '723 patent (gripper prongs "...pass into and grip the wood sill..." Col. 2, lines 58-59). Still further, as pointed out above with reference to Figure 7 of the '723 patent, the gripper prongs on the plate resting on the substrate are taught to extend upward and away from the substrate and into the wood sill. This is opposite from the required direction that the spacer dimples of the '185 patent have (to sit on top of the substrate).

The teachings of the '185 patent and the '723 patent are therefore contrary to one another. For these reasons, there can be no motivation to combine the spacer dimples of the '185 patent with the sharp pointed gripper prongs of the '723 patent. The two patents can therefore not be properly combined in an obviousness rejection of claims 32, 35 and 36.

B.(3) THE '185 PATENT TEACHES AWAY FROM THE REQUIRED ANTI-ROTATION ELEMENTS

It is further submitted that the '185 patent teaches away from the required anti-rotation elements of claims 32, 35 and 36. As noted above, the '185 patent (titled "Method of Affixing a Heat Sink to a Substrate and Package Thereof") discloses a method of affixing a heat sink to an electronics substrate useful for dissipating heat from a semiconductor chip. The disclosed four dimples 31 on the base of the electronics heat sink are not "anti-rotation elements configured for engaging and penetrating the substrate ... and for counteracting a moment acting upon said rod hanger as the rod is threadably received by said rod receiving portion" as is required by each of claims 32, 35 and 36. Instead, as best understood, the dimples 31 are spacers configured to rest on the surface

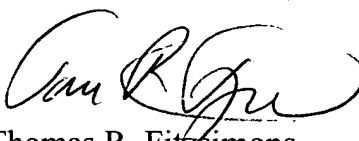
of the substrate 1 to thereby create a space between the sink 3 and substrate 1 to allow for dissipation of heat from the semiconductor chip 2. This is another basis for the removal of the obviousness rejection of claims 32, 35 and 36.

C. CONCLUSION

It is submitted that all the claims in their current form are allowable over the cited prior art. Timely consideration is requested. Should issues remain for resolution before claims can be allowed, the undersigned attorney will be pleased to discuss the same over the phone. All correspondence should continue to be directed to Applicant's primary attorney Ms. Lisa Soltis at the correspondence address of record.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

By 
Thomas R. Fitzsimons
Registration No. 40,607

February 9, 2007

Suite 2500
300 South Wacker Drive
Chicago, Illinois 60606
(312) 360-0080
Customer No. 24978